

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1 1. (Currently Amended) A computer system communicatively coupled to a
2 network, comprising:
3 an operating system;
4 a programmable non-volatile memory;
5 at least one microprocessor operatively coupled to execute at least one instruction from
6 the programmable non-volatile memory in response to a boot request, the microprocessor
7 configured to controllably write to the programmable non-volatile memory; and
8 at least one fixed storage device operatively coupled to the at least one microprocessor,
9 ~~the fixed storage device containing a boot image that is configured with appropriate instruction~~
10 ~~code suited to transition the at least one microprocessor to an operational mode, wherein the at~~
11 ~~least one fixed storage device receives~~ from the network at least a portion of ~~and stores~~ a boot
12 ~~memory image~~ image comprising:
13 a system loader;
14 a firmware patch;
15 a configuration file ~~including information that directs the microprocessor to one~~
16 ~~or more locations within one of the fixed storage devices and a random access memory~~
17 configured to direct the system loader to execute the firmware patch instead of the operating
18 system in response to a subsequent boot request; and
19 [[a]] the firmware patch configured to write a firmware upgrade to the
20 programmable non-volatile memory, the firmware patch comprising:
21 an install application;
22 a firmware revision containing at least one instruction different from
23 firmware within the programmable non-volatile memory; and
24 a flash application having a bootable kernel, firmware update logic, and a
25 non-volatile memory interface, wherein the ~~system loader instructs~~ firmware update logic is
26 executable on the microprocessor to write the firmware revision to the programmable
27 non-volatile memory.

1 2. – 3. (Cancelled)

1 4. (Previously Presented) The computer system of claim 1, wherein the at least one
2 fixed storage device receives and stores new firmware.

1 5. (Previously Presented) The computer system of claim 1, wherein the at least one
2 fixed storage device receives and stores an application.

1 6. (Previously Presented) The computer system of claim 1, wherein the bootable
2 kernel comprises a system loader interface and reboot logic.

1 7. (Previously Presented) The computer system of claim 6, wherein the bootable
2 kernel comprises an operating system.

1 8. (Previously Presented) The computer system of claim 6, wherein the bootable
2 kernel comprises file management system.

1 9. (Currently Amended) A computer network, comprising:

2 a plurality of computer systems communicatively coupled to a network infrastructure,
3 each of the plurality of computer systems configured with a non-volatile memory containing a
4 common firmware version designated for replacement and a fixed storage device containing a
5 boot image having appropriate instruction code suited to transition the respective computer
6 system to an operational mode;

7 a user input device communicatively coupled to at least one computer system
8 communicatively coupled to the network infrastructure, the at least one computer system
9 configured with write access permission for the respective fixed storage device associated with
10 each of the plurality of computer systems, wherein an input from the user input device initiates a
11 transfer of a ~~patch memory map and a~~ firmware upgrade patch to the plurality of computer
12 systems, the firmware upgrade patch comprising a revised firmware and a bootable kernel
13 different from an operating system operable on the respective computer system, ~~the patch~~
14 ~~memory map comprising information that directs a computer system to execute instructions~~
15 ~~stored at one or more locations~~ the transferred firmware upgrade patch executable in the
16 respective computer system to verify whether the revised firmware is able to successfully
17 upgrade the common firmware version.

1 10. (Currently Amended) The network of claim 9, wherein the firmware upgrade
2 patch ~~and the patch memory include~~ includes instruction code ~~necessary~~ to support the
3 replacement of the common firmware version with the revised firmware by each of the
4 respective plurality of computer systems.

1 11. – 17. (Cancelled)

1 18. (Currently Amended) A method for performing a firmware upgrade, comprising:
2 delivering, over a network, a firmware install patch containing new firmware, an install
3 application, a configuration file, and a flash application to ~~a boot~~ disks disk within respective a
4 plurality of networked computer systems, each of said computer systems having a version of a
5 firmware ~~version~~ designated for the firmware upgrade, wherein the flash application comprises a
6 bootable kernel, firmware update logic, and a non-volatile memory interface;
7 initiating ~~an~~ the install application contained within the firmware install patch, ~~said install~~
8 ~~application containing instructions suited to perform the firmware upgrade;~~
9 modifying the configuration file in the firmware install patch ~~an initial system loader in~~
10 ~~response to the install application~~ to direct a system loader to execute the firmware install patch
11 ~~instead of an operating system in each computer system~~ microprocessor to execute instructions
12 ~~from the boot image identified by one or more memory locations identified within the~~
13 ~~configuration file upon~~ in response to a subsequent microprocessor reset ~~input~~;
14 initiating a microprocessor reset; ~~input in response to the install application that loads a~~
15 ~~plurality of instructions in accordance with the boot image;~~
16 executing the flash application in response to the initiated microprocessor reset;
17 erasing, by the firmware update logic, the firmware within each of the plurality of
18 networked computer systems in response to ~~the install application~~ execution of the flash
19 application; and
20 writing, by the firmware update logic, the new firmware to each of the plurality of
21 networked computer systems in response to execution of the flash application in each of the
22 plurality of networked computer systems ~~the install application.~~

1 19. (Cancelled)

1 20. (Currently Amended) The method of claim 18, wherein the delivered firmware
2 install patch comprises ~~a boot image that contains an operating system, a file manager, and at~~
3 least one executable configured to verify the version of the firmware stored in the computer
4 system prior to writing the new firmware.

1 21. (Currently Amended) The method of claim 18, further comprising:
2 installing an operating system that requires the new firmware;
3 installing a software patch that requires the new firmware;
4 resetting the configuration file to redirect ~~redirecting the initial~~ system loader to select the
5 appropriate memory address upon a subsequent microprocessor reset ~~inputs~~ to apply the
6 upgraded firmware, operating system, and software patch; and
7 removing the firmware install patch from the computer system.

1 22. – 26. (Cancelled)

1 27. (Currently Amended) A computer system communicatively coupled to a
2 network, comprising:
3 a programmable non-volatile memory having a first firmware;
4 at least one microprocessor operatively coupled to controllably write to the
5 programmable non-volatile memory and execute at least one instruction from the programmable
6 non-volatile memory in response to a boot request; and
7 at least one fixed storage device operatively coupled to the at least one microprocessor,
8 the storage device containing a firmware patch and a configuration file configurable to select the
9 firmware patch for execution on a next boot, the firmware patch comprising:
10 a ~~patch memory map comprising an index that identifies the location of and~~
11 ~~directs the computer system to execute instructions stored at one or more locations, the~~
12 ~~instructions forming:~~
13 an install application;
14 a second firmware different from the first firmware; and
15 a flash application comprising:
16 a bootable kernel including a system loader interface and reboot
17 logic;
18 a firmware update logic; and
19 a non-volatile memory interface to enable the firmware update
20 logic to upgrade the first firmware in the programmable non-volatile memory with the second
21 firmware, wherein the flash application instructs a system loader via the system loader interface
22 to select the bootable kernel upon receipt of a boot request
23 the install application executable on the microprocessor to verify whether
24 the second firmware is able to successfully upgrade the first firmware.

1 28. (Currently Amended) The computer system of claim 27, ~~wherein further~~
2 comprising a system loader ~~executes~~ to execute the flash application upon the next boot based on
3 the configuration file.

1 29. (Previously Presented) The computer system of claim 27, wherein the firmware
2 update logic and the non-volatile memory interface store the second firmware on the non-volatile
3 memory.

1 30. (Cancelled)

1 31. (Currently Amended) The computer system of claim 27, wherein upon the
2 occurrence of ~~[[the]]~~ a next boot request after updating the first firmware with the second
3 firmware, the ~~[[new]]~~ second firmware and a system loader transfer an operating system to a
4 random access memory communicatively coupled to the at least one microprocessor.

1 32. (Previously Presented) The computer system of claim 27, wherein the install
2 application executes a file system operation.

1 33. (Previously Presented) The computer system of claim 32, wherein the file system
2 operation results in the removal of the firmware patch from the at least one fixed storage device.

1 34. (New) The computer system of claim 1, wherein the install application resets the
2 configuration file in the boot image to select the operating system to execute on a subsequent
3 boot after writing of the firmware revision.

1 35. (New) The computer system of claim 1, wherein the firmware patch is executable
2 on the microprocessor to verify whether the firmware revision can successfully upgrade the
3 firmware within the programmable non-volatile memory.

1 36. (New) The computer system of claim 35, wherein the firmware patch is
2 executable on the microprocessor to report to a remote system whether the firmware revision can
3 successfully upgrade the firmware within the programmable non-volatile memory.

1 37. (New) The network of claim 9, wherein the firmware upgrade patch is executable
2 in each computer system to report to a user whether the revised firmware is able to successfully
3 upgrade the common firmware version.

1 38. (New) The method of claim 18, further comprising resetting the configuration
2 file to direct the system loader to execute the operating system in each computer system upon a
3 next microprocessor reset after writing the new firmware.

1 39. (New) The computer system of claim 27, wherein the configuration file is
2 resettable to enable execution of the operating system in response to a next boot after updating
3 the first firmware with the second firmware.

1 40. (New) The computer system of claim 27, wherein the fixed storage device further
2 stores a boot image, the boot image containing the firmware patch and configuration file.